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Poster: Systematic review of exercise interventions for children with Type 1 diabetes mellitus

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Background: Exercise, in addition to insulin therapy and diet, plays an important role in the treatment of children with T1DM. The benefits of exercise include improved cardiovascular fitness, obesity control and blood lipid profile as well as better glycaemic and metabolic control. Exercise may lower the risk of cardiovascular disease, a major contributor to morbidity and mortality in this group.
Objectives: (i) examine the key features of exercise intervention programmes, (ii) evaluate their effectiveness, and (iii) comment on their strengths and weaknesses.
Methods: A systematic search of the literature was carried out. Studies included reported an exercise intervention study, had RCT or quasi- experimental design, and had a child T1DM population. Twelve studies were included in the analysis.
Results: Four categories of exercise interventions were identified: home-based aerobic exercise, non-home-based aerobic exercise, aerobic and weight training programmes and one-off exercise sessions. Results of each type of intervention varied and included improvements in blood glucose levels, daily insulin dose, glycaemic regulation, aerobic capacity, cardiorespiratory endurance, strength, fat mass, BMI and waist circumference.
Conclusions: Combined aerobic and resistance training programmes resulted in the most beneficial effects for children with T1DM and have additional benefits when compared to simple aerobic exercise alone.